May 15, 2003

Robert Burt
c/o Kathleen Martinez
Chair, Small Business Advocacy Review Panel
OSHA
Washington, DC 20210

Dear Mr. Burt,

I, my staff, and several of ESCI's utility customers, have reviewed the proposed changes of OSHA 1910.269 and OSHA 1926. Listed below are my comments on the proposed revisions.

ESCI provides in-depth safety and training services on a continuous basis to more than 45 electric utilities and electrical contractors in Washington, Oregon, Idaho, California, Nevada and Arizona. Our clients employ anywhere from two to 350 employees.

ESCI employs 12 safety and training professionals with more than 345 years of utility experience as qualified electrical workers and safety professionals. ESCI's staff are active members in the ASTM F18 committee, the IEEE/ESMO Subcommittee, the US representative to IEC, Quad States Safety Group, NUTSEA and a number of other electric utility industry groups.

With more than 18 years of experience in research, testing, consulting and teaching over 900 courses on equipotential grounding, I have made several recommended revisions to the 1910.269 and 1926 regulations. I am willing to meet with a group to discuss my points and reasons for these revisions. I believe they will truly save lives in our industry.

We appreciate the opportunity to provide comments on these proposed revisions.

Comments on the Proposed Revision of OSHA 1910.269

- 1910.269(a)(2)(ii)(E) states "The degree of training provided shall be determined by the risk to the employee".

  This sentence should be removed from the regulation since it is very vague and does not provide any quantative value of training. The section currently in 1910.269 states:

  "Employees shall be trained in and familiar with safety-related work practices, safety procedures, and other safety requirements in this subpart that pertain to their respective job assignments."

  This existing paragraph covers the type and amount of training needed for each employee. It requires that the employee be fully trained and understand the safety-related work practices and safety procedures for each job assignment.

- 1910.269 (a)(2)(C) "Training" does not provide details on the quantity of observations required by the Host employer of the contractor's employees. Often non-technical employees of the Host employer will drive by the contractor's work site, deliver materials or information to the contractor, and review the progress of the work in relation to the basic construction requirements. Would these employees be expected by OSHA to identify violations?

  This section will increase the liability of the Host employer to civil litigation whenever a contract employee is injured.

  Attachment "A" are comments of several ESCI customers on this subject.

- 1910.269(l)(3)(ii)(A) "Type of insulation" requires "the insulating equipment be put on in a position where the employee cannot reach into the minimum approach distance," and (B) requires "the insulating equipment cannot be removed until the

employee is in a position where he or she cannot reach into the minimum approach distance."

This is a very good addition to the regulation and will provide additional worker safety if it is followed.

- 1910.269(l)(4)(ii) requires that the employee work from a position where they cannot reach into the electrical component of the minimum approach distance.

  Again, this is a good addition to the regulation and will provide additional worker safety if it is followed.

- The revision of Table R-6 is approipate.

- 1910.269(n)(4)(ii) "Protective grounding equipment" proposes that the grounding equipment can be reduced in size if it is attached to a smaller conductor.

  I believe the existing regulations allows for a reduced size in grounding equipment to match the fault current possible at the work site. I don't believe that this adds anything to the regulation, but in turn probably does no damage to add.

- OSHA 1910.269(p)(4) "Operations near energized lines and equipment" proposes that "the insulated portion of an aerial lift operated by a qualified employee in the lift is exempt from this requirement if the applicable minimum approach distance is maintained between the uninsulated portions of the aerial lift and exposed objects of different potential."

  I agree on this proposed revision since it clarifies the limits of the uninsulated portion of the aerial lift.

  However, I propose that the 1910.269(p)(4) be revised to state:

  (d) Operations near energized lines and equipment.

  (1) Application. Paragraph (d) of this section applies to employees on or near mechanical equipment that is

operated within the distances specified in 1926.550(a)(15) of exposed energized lines and equipment. The insulated portion of an aerial lift operated by a qualified employee in the lift is exempt from this section if the applicable minimum approach distance (MAD) in Tables R6 through R10 is maintained between the un-insulated portions of the aerial lift and exposed energized lines and equipment.

(2) Qualified employee. The mechanical equipment shall be operated by a qualified employee.

(3) Observer. A designated employee other than the equipment operator shall observe the approach distance to exposed energized lines and equipment and give timely warnings before the approach distance required by paragraph (d)(4) and (d)(5) is reached, unless the employer can demonstrate that the operator can accurately determine that the such approach distance is being maintained.

(4) Working outside the minimum approach distance. When mechanical equipment is operated between the distances specified in 1926.550(a)(15) and the minimum approach distance of Table R-6 through Table R-10 each employee shall be protected from the hazards that might arise from accidental equipment contact with the exposed energized lines and equipment by the use of at least one of the paragraph (d)(4)(i) through (4)(iii) requirements. The measures used and the associated safe work practices shall ensure that employees will not be exposed to hazardous differences in potential.

NOTE: During the job briefing such factors as the task to be performed, length of the boom, stability of the ground supporting the equipment, wind and other weather conditions, skill of the operator, responsiveness of the mechanical equipment's controls, and type of winch line, wire or "hot" rope, shall be considered to determine if an additional distance should be added to the clearances of Table R-6 through R-10.

(4)(i) The exposed energized lines and equipment exposed to contact shall be covered with insulating protective material that will withstand the type of contact that might be made during operations. Adequate insulating protective material shall be installed so that the mechanical equipment does not enter the minimum approach distances specified in Table R-6 through Table R-10 to the exposed energized lines and equipment.

(4)(ii) The equipment shall be insulated for the voltage involved. The un-insulated portions of the mechanical equipment shall not approach the exposed energized lines and equipment any closer than the minimum approach distance specified in table R-6 through Table R-10.

(4)(iii) The equipment shall be grounded to the best available ground to minimize the time the exposed energized lines and equipment remains energized, and at least one of the following practices shall be used:

(A) Permanent or temporary insulated platforms, conductive grids or mats bonded to the equipment chassis, shall be installed at points where employees need to contact the equipment.

(B) Employees shall use protective equipment, such as insulated gloves or insulated footwear to protect from touch potentials around the mechanical equipment.

(C) The mechanical equipment shall be barricaded to prevent employees from contacting the equipment.

(5) Working within the minimum approach distance. If, during operation of mechanical equipment, the equipment is operated within the approach distance of Table R-6 through Table R-10 to the exposed energized lines and equipment, the operation shall comply with the requirements of (4)(i) or (4)(ii).

NOTE: This work method is not permitted if (4)(i) or (4)(ii) can not be met.

(6) Bonding. When any two or more pieces of mechanical equipment at a work site, having a boom near exposed energized lines and equipment, as specified in paragraphs (d)(4) or (d)(5), and are positioned in a way that can allow both to be contacted by workers at one time, both shall be bonded together to minimize potential differences.

I have a number of concerns with the wording of OSHA 1910.269(p)(4)"Mechanical Equipment." Listed below are my concerns:

- I believe we need to state that only qualified workers can operate mechanical equipment within the distances of 1926.550(a)(15) "The 10 foot rule." This will eliminate unqualified workers from working within 10 feet of energized lines. Qualified workers such as linemen, equipment operators, etc, have been trained and are experienced operating mechanical equipment near energized lines and know the MAD distances they cannot enter.

- I then suggest that we break the distances of 1910.269 R-6 into two parts, "Working within MAD" and "Working outside MAD."

  When working within MAD, I suggest we allow only cover-up or an insulated boom. The operator must ensure that the non-insulated portion does not enter MAD. With his/her training, qualifications, and an observer (as required in this section) this work method is safe. This revision would not allow a grounded boom inside MAD as it currently does.

  When the boom is inside MAD all attention is on the boom and its position. My concern is when we are working outside of MAD and have no intention of getting the boom inside MAD that the accidents happen.

When working outside MAD. I suggest that between the distances of 1926.550(a)(15) and MAD we require a qualified worker operate the mechanical equipment, and they must:

Use cover-up or,
Use an insulated boom and ensure through proper work practices that the un-insulated portion will not enter MAD or,
Ground and barricade the vehicle or,
Ground and use ground mats (grids) or,
Ground and use insulated protective equipment (gloves, boots…).

Current law, if read word for word which is occurring in the field, requires that when using the insulated portion of mechanical equipment, the un-insulated portion cannot possibly reach into MAD. This requires the truck to be positioned so far away that it cannot lift anything, and is often impractical since the truck may need to be 30 feet from the pole or line to keep the steel boom section out of MAD.

The current work practice is performed hundreds of times each day across the country, and a number of workers are hurt performing this task. The suggested revision to the regulations would eliminate a great deal of these accidents.

Comments on the Proposed Revision to OSHA 1926.97

- 1926.97(c)(x)(D) states "Rubber insulating gloves and sleeve with minor physical defects, such as small cuts, tears, or punctures, may be repaired by a application of a compatible patch. Also, rubber insulating gloves and sleeves with minor surface blemishes may be repaired with a compatible liquid compound".

  I recommend that this paragraph be removed from the regulations. The ASTM F18 committee in Toronto, Canada, voted to remove this option from the next revision of the standard. I know of no utility that repairs rubber insulating

gloves and sleeves anymore and the option should be removed.

Comments of the Proposed Revision of OSHA 1926

- 1926.950 (b)(iii) states "The degree of training provided shall be determined by the risk to the employee".

  This sentence should be removed from the regulation since it is very vague and does not provide any quantative value of training. The section currently in 1910.269 and proposed in 1926.950 (b)(1)(i) "Training," states:

  "Employees shall be trained in and familiar with safety-related work practices, safety procedures, and other safety requirements in this subpart that pertain to their respective job assignments."

  This existing paragraph covers the type and amount of training needed for each employee. It requires that the employee be fully trained and understand the safety-related work practices and safety procedures for each job assignment.

- 1926.950(C)(1)(iii) "Training" does not provide details on the quantity of observations required by the Host employer of the contractor's employees. Often non-technical employees of the Host employer will drive by the contractor's work site, deliver materials or information to the contractor, and review the progress of the work in relation to the basic construction requirements. Would these employees be expected by OSHA to identify violations?

  This section will increase the liability of the Host employer to civil litigation whenever a contract employee is injured.

  Attached are comments of several ESCI customers on this subject.

- OSHA 1926.959(d)(1) "Operations near energized lines and equipment" proposes that "the insulated portion of an aerial lift operated by a qualified employee in the lift is exempt from this requirement if the applicable minimum approach distance is maintained between the uninsulated portions of the aerial lift and exposed objects of different potential."

  I agree on this proposed revision since it clarifies the limits of the uninsulated portion of the aerial lift.

  However, I propose that the 1926.959(d)(3) be revised to state:

  (1) Application. Paragraph (d) of this section applies to employees on or near mechanical equipment that is operated within the distances specified in 1926.550(a)(15) of exposed energized lines and equipment. The insulated portion of an aerial lift operated by a qualified employee in the lift is exempt from this section if the applicable minimum approach distance (MAD) in Tables V1 through V5 is maintained between the un-insulated portions of the aerial lift and exposed energized lines and equipment.

  (2) Qualified employee. The mechanical equipment shall be operated by a qualified employee.

  (3) Observer. A designated employee other than the equipment operator shall observe the approach distance to exposed energized lines and equipment and give timely warnings before the approach distance required by paragraph (d)(4) and (d)(5) is reached, unless the employer can demonstrate that the operator can accurately determine that the approach distance is being maintained.

  (4) Working outside the minimum approach distance. When mechanical equipment is operated between the distances specified in 1926.550(a)(15) and the minimum approach distance of Table V-1 through Table V-5 each employee shall be protected from the hazards that might arise from accidental equipment contact with the exposed energized lines and equipment by the use of at least one of

the paragraph (d)(4)(i) through (4)(iii) requirements. The measures used and the associated safe work practices shall ensure that employees will not be exposed to hazardous differences in potential.

NOTE: During the job briefing such factors as the task to be performed, length of the boom, stability of the ground supporting the equipment, wind and other weather conditions, skill of the operator, responsiveness of the mechanical equipment's controls, and type of winch line, wire or "hot" rope, shall be considered to determine if an additional distance should be added to the clearances of Table V-1 through V-5.

(4)(i) The exposed energized lines and equipment exposed to contact shall be covered with insulating protective material that will withstand the type of contact that might be made during operations. Adequate insulating protective material shall be installed so that the mechanical equipment does not enter the minimum approach distances specified in Table V-1 through Table V-5 to the exposed energized lines and equipment.

(4)(ii) The equipment shall be insulated for the voltage involved. The un-insulated portions of the mechanical equipment shall not approach the exposed energized lines and equipment any closer than the minimum approach distance specified in table V-1 through Table V-5.

(4)(iii) The equipment shall be grounded to the best available ground to minimize the time the exposed energized lines and equipment remains energized, and at least one of the following practices shall be used:

(A) Permanent or temporary insulated platforms, conductive grids or mats bonded to the equipment chassis, shall be installed at points where employees need to contact the equipment.

(B) Employees shall use protective equipment, such as insulated gloves or insulated footwear to protect from touch potentials around the mechanical equipment.

(C) The mechanical equipment shall be barricaded to prevent employees from contacting the equipment.

(5) Working within the minimum approach distance. If, during operation of mechanical equipment, the equipment is operated within the approach distance of Table R-6 through Table R-10 to the exposed energized lines and equipment, the operation shall comply with the requirements of (4)(i) or (4)(ii).

NOTE: This work method is not permitted if (4)(i) or (4)(ii) can not be met.

(6) Bonding. When any two or more pieces of mechanical equipment at a work site, having a boom near exposed energized lines and equipment, as specified in paragraphs (d)(4) or (d)(5), and are positioned in a way that can allow both to be contacted by workers at one time, both shall be bonded together to minimize potential differences.

I have a number of concerns with the wording of OSHA 1926.959(p)(4)"Mechanical Equipment." Listed below are my concerns:

1. I believe we need to state that only qualified workers can operate mechanical equipment within the distances of 1926.550(a)(15) "The 10 foot rule." This will eliminate unqualified workers from working within 10 feet of energized lines. Qualified workers such as linemen, equipment operators, etc, have been trained and are experienced operating mechanical equipment near energized lines and know the MAD distances they cannot enter.

2. I then suggest that we break the distances of 1910.269 R-6 into two parts, "Working within MAD" and "Working outside MAD."

Working within MAD. I suggest we allow only cover-up or an insulated boom. The operator must ensure that the non-insulated portion does not enter MAD. With his/her training, qualifications, and an observer (as required in this section) I believe this is safe. This revision would not allow a grounded boom inside MAD as it currently does.

When the boom is inside MAD all attention is on the boom and its position. My concern is when we are working outside of MAD and have no intention of getting the boom inside MAD that the accidents happen.

Working outside MAD. I suggest that between the distances of 1926.550(a)(15) and MAD we require a qualified worker operate the mechanical equipment, and they must:

Use cover-up or,
Use an insulated boom and ensure through proper work practices that the un-insulated portion will not enter MAD or,
Ground and barricade the vehicle or,
Ground and use ground mats (grids) or,
Ground and use insulated protective equipment (gloves, boots...).

Current law, if read word for word which is occurring in the field, requires that when using the insulated portion of mechanical equipment, the un-insulated portion cannot possibly reach into MAD. This requires the truck to be positioned so far away that it cannot lift anything, and is often impractical since the truck may need to be 30 feet from the pole or line to keep the steel out of MAD.

- 1926.960(g) "Clothing"

We strongly recommend that OSHA accept the proposed draft of ANSI/IEEE C2 relating to protection from electrical arc

hazard. This document is workable by the industry and can be implemented. The IEEE/ANSI C2 is a consensus standard assembled by the electric utility industry, for the electric utility industry.

- 1926.961(c)(5) Test for energized condition. "After the applicable requirements in paragraph (c)(1) through (c)(4) of this section have been followed and the employee in charge of the work has been given a clearance by the system operator, the lines and equipment to be worked shall be tested to ensure that they are de-energized."

  The last part of the sentence should be revised to read "the lines and equipment to be worked shall be tested ***using an industry approved voltage detector*** to ensure that they are de-energized." Currently some people test by 'buzzing" or "fuzzing" using a piece of metal (crescent wrench) on the end of a hot stick. This testing method may not provide an accurate method of determining if the line is energized. Industry approved voltage detectors are the standard in the industry and are widely used with great accuracy.

- 1926.961(c)(7) "Consider lines and equipment de-energized." This paragraph should be revised to state "After the applicable requirements of paragraphs (c)(1) through (c)(6) of this section have been followed, the lines and equipment involved may be worked as de-energized ***and grounded."***

  The lines and equipment are not safe to contact until they have been de-energized AND GROUNDED. The definition of de-energized states disconnected from sources and charge. It does not say also grounded. West of the Mississippi we use the term de-energized to mean disconnected from sources of energy. However, the line or equipment could still be energized and it is not considered grounded until it is de-energized and GROUNDED.

- 1926.962(b) General. For any employee to work lines and equipment as de-energized, the lines or equipment shall be de-energized under the provisions of 1926.961 and shall be

grounded as specified in paragraphs (c) through (h) of this section...

The sentence should be revised to read "For any employee to work lines and equipment as de-energized ***and grounded***, the lines or equipment shall be de-energized under the provisions of 1926.961 and shall be grounded as specified in paragraphs (c) through (h) of this section..." Again, the line or equipment is not safe until it has been de-energized and grounded.

- 1926.962(c) Equipotential Zone. Temporary protective grounds shall be placed at such locations and arranged in such a manner as to prevent each employee from being exposed to hazardous differences in electrical potential.

  The sentence should be revised to read ***"Temporary protective grounding equipment*** shall be placed at such locations and arranged in such a manner as to prevent each employee from being exposed to hazardous differences in electrical potential." Again, this follows the proposed terms. I often get questions about the old term "temporary protective grounds" and what it means.

- 1926.962 (d) Protective grounding equipment. 1(ii) If the protective grounding equipment required under paragraph (d)(1)(i) of this section would be larger than the conductor to which it is attached, this equipment may be reduced in size provided that it is sized and placed so that:

  1. The conductor being grounded will fail before the protective grounding equipment,
  2. The conductor is the only considered as grounded where it is protected against failure by the protective grounding equipment, and
  3. No employees would be endanger by the failed conductor.

  I believe section (d) is not required and should not be included in the final draft of 1926. As stated in (iii) below the minimum size of grounds are #2. Grounds must be sized for the available

fault current and if the fault current is low often the size of line conductor is also small. The employer must review the available fault current available and size the grounds accordingly. A decision is often made by the utility that the system is capable of producing 12,000 amps in 10% of the areas, but we do not want to purchase and carry two types of grounds, #2 and #1/0, so we will provide only #1/0 to cover all areas. This is a work method and tool decision, not a OSHA compliance decision.

- 1926.962(e) Testing. Before any ground is installed, lines and equipment shall be tested and found absent of nominal voltage, unless a previously installed ground is present.

  The paragraph should read "Testing. Before any ***temporary protective grounding equipment*** is installed, lines and equipment shall be tested ***using an industry approved voltage detector*** and found absent of nominal voltage, unless a previously installed ***temporary protective grounding equipment*** is present."

  Lines and equipment must be tested for being de-energized using an industry approved voltage detector and not a screwdriver or crescent wrench which is common now in the industry.

- 1926.964(a)(3) Setting and moving poles. (i) When poles are set, moved, or removed near exposed energized conductors, the pole may not contact the conductors.

  The paragraph should read:

  When poles are set, moved, or removed near exposed energized conductors and equipment, the pole shall not come within the minimum approach distance of table V1 – V5 of the energized conductors and equipment unless (a)(3)(i)(1) or (a)(3)(i)(2 is used), and each employee is protected from the hazards that might arise from accidental contact of the pole and exposed energized lines and equipment. When poles are set, moved or removed within

the minimum approach distance of table V1 – V5 of the energized conductors and equipment, least one of the paragraphs (a)(3)(i)(1) through (a)(3)(i)(2) shall be used.

(1) Insulated cover-up, rated for the voltage involved shall be used to cover the exposed energized lines or equipment.

(2) Insulated cover-up, rated for the voltage involved shall cover the portion of the pole that will enter the minimum approach distances of table V1 – V5 of exposed energized conductors and equipment.

The measures used and the associated safe work practices shall ensure that employees will not be exposed to hazardous differences in potential.

NOTE: During the job briefing such factors as the task to be performed, length of the pole, stability of the ground supporting the lifting equipment, wind and other weather conditions, skill of the operator, responsiveness of the mechanical equipment's controls, and type of winch line, wire or rope, shall be considered to determine if an additional distance should be added to the clearances of Table V-1 through V-5.

Poles, whether wood, steel or concrete are conductive, often very conductive, and should never enter MAD without insulated cover-up. This task is conducted thousands of times each day across the US usually very safely. OSHA needs to insure that safe work practices are used when working with poles. The above proposed statement provides that procedure.

- **1926.694** (b)(2) Conductors, cables, and pulling and tensioning equipment.

This paragraph should be re-titled ***"Pulling and Tensioning Equipment.***

This paragraph discusses the pulling and tensioning equipment only. We discuss the conductors and cables in 1926.694 (b)(4).

The proposed 1926.694 (b)(2) should be replaced with the following:

(i) Application. Paragraph (b)(2) of this section applies to employees on or near mechanical equipment pulling or tensioning conductors and cables over, under, or within possible contact with energized lines and equipment.

(ii) Qualified employee. Mechanical pulling and tensioning equipment shall be operated by a qualified employee. The operator shall be positioned on the mechanical equipment or protected using the methods described in section (iv)(A) and (iv)(B) below.

(iii) Each employee shall be protected from the hazards that might arise from accidental contact of the conductor or cable being pulled to energized lines and equipment. The measures used and the associated safe work practices shall ensure that employees will not be exposed to hazardous differences in potential.

NOTE: During the job briefing such factors as the task to be performed, length of the pull, stability of the ground supporting the equipment, wind and other weather conditions, skill of the operator, responsiveness of the mechanical equipment's controls, and type of conductor, line, wire or rope, shall be considered to determine if additional precautions should be considered.

(iv) The mechanical equipment shall be grounded to the best available ground to minimize the time the conductor or cable being pulled is energized if the conductor or cable contacts energized lines and equipment, and at least one of the following practices shall be used:

(A) Permanent or temporary insulated platforms, conductive grids or mats bonded to the equipment chassis, shall be installed at points where employees need to contact the equipment.

(B) Employees shall use protective equipment, such as rated insulated gloves and insulated footwear to protect from touch and step potentials around the mechanical equipment.

(C) The mechanical equipment shall be barricaded to prevent employees from contacting the equipment.

(v) When other vehicles or equipment are electrically connected to the mechanical pulling or tensioning equipment, or located in a way that can allow both to be contacted by workers at one time, both shall be bonded together and included in the requirements of (iv)(A) through (iv)(c).

The proposed revision to 1926.694 (b)(2) uses the procedures being developed by the IEEE/ESMO Subcommittee, and follows the proposed changes of the mechanical equipment section 1926.959(d)(3) with appropriate changes. These changes are the current thinking of the industry procedures, and should be followed to protect workers near mechanical equipment.

- **1926.694 (b)(4)(i)** "Induced voltages" states:

Each bare conductor shall be grounded in increments so that no point along the conductor is more than 3.22 km (2 miles) from a ground.

(ii) The grounds required in the paragraph (b)(4)(i) of this section shall be left in place until the conductor installation is completed between dead ends.

(iii) The grounds required in paragraph (b)(4)(i) of this section shall be removed as the last phase of aerial cleanup.

(iv) If employees are working on bare conductors, grounds shall also be installed at each work location where these employees

are working and grounds shall be installed at all open dead-ends or catch-off points or the next adjacent structure.

1926.964 (b)(i) through (b)(iv) provides no additional protection and cannot be justified with today's knowledge of equipotential grounding procedures. These sections should be removed from the 1926 final draft.

I recommend that this section be revised to state:

1926.694 (b)(4)(i) <u>Conductor and cable pulling.</u> When conductors and cables are pulled in over, under, or within possible contact with energized lines and equipment, or where dangerous induced voltages are possible, each employee shall be protected from the hazards that might arise from accidental contact of the conductor or cable being pulled with energized lines and equipment, or from induced voltages. The measures used and the associated safe work practices shall ensure that employees will not be exposed to hazardous differences in potential.

(ii) Employees shall not come within the minimum approach distances of Table V1 through V5 of conductors or cables being pulled. The appropriate minimum approach distance shall be determined using the highest voltage that could energize the conductor or cable.

(iii) <u>Workers on the Ground</u>. After the conductor or cable has begun the process of being pulled in, employees on the ground shall protect themselves from possible hazardous differences in potential by using one or more of the procedures (iii)(A) through (iii)(C) below when contacting the conductor or cable.

- ***(A) Insulated platforms shall be installed at points where employees need to contact the conductor or cable.***
- ***(B)Employees shall use protective equipment rated for the voltage involved, such as insulated gloves or insulated footwear.***

(C)The employee shall create an equipotential zone at the work location.

(iv) <u>Overhead work methods.</u> Workers shall not come within the minimum approach distance of Table V1 through V5 of conductors or cables that have been pulled in until the conductor or cable has been grounded as specified in 1926.962(c) through 1926.962(f). The appropriate minimum approach distance shall be determined using the highest voltage that could energize the conductor or cable.

(v) <u>Temporary Grounding</u>. A traveling ground shall be installed on the conductor or cable being installed and will remain on until the conductor or cable has been pulled in and secured. The traveling ground shall be grounded to the best available ground to minimize the time the energized line and equipment remains energized.

The proposed revision to 1926.694 (b)(4)(i) uses the procedures being developed by the IEEE/ESMO Subcommittee, and follows the proposed changes of the grounding section 1926.962 with appropriate changes. These changes are the current thinking of the procedures which should be followed to protect workers. I would be happy to explain the reasons to make the changes listed above better in person.

- **1926.964(b)(4)(v)** If two bare conductors are to be spliced, the conductors shall be bonded and grounded before being spliced.

This paragraph should be written ***"If two conductors are to be spliced, the conductors shall be bonded together and workers in contact with the conductors shall follow (b)(4)(i) through (b)(4)(iv) before the splicing begins."***

The word "bare" should be dropped, and we need to insure that they follow (b)(4)(i) through (b)(4)(iv) at the work location.

Again, thank you for allowing us to comment on these revisions. We look forward to discussing our suggestions with you when and if you wish.

Sincerely,

Brian Erga
President
ESCI Inc

ATTACHMENT "A"

Comments from the Mid-Columbia Safety Group which includes Benton PUD, Franklin PUD, City of Richland, Big Bend Co-op, Benton REA, Washington State.

1. We are not confidant that employers can understand the proposal as written and not confidant that interpretations will be uniform. We suggest you integrate both standards (1910.269 and 1926 Subpart V) under one.

2. The term host employer is one that utilities are in strong disagreement with and we believe this concept is basically flawed. This rule making is not consistent with good business practices. It creates another layer of inefficient bureaucracy. The role to demand safety compliance from contractors is best left to OSHA. Utilities should not have the responsibility of record verification and keeping. The liability exposure to the utility would be greatly increased by this rule and would force many utilities to employ new methods to do what is now contractors' work. The very livelihood of many diligent contract firms would most certainly be at risk due to the many implications of this rule.

3. We know of no contract firms that do exclusively construction work.

4. This question does not apply to the state of Washington, only to Federal OSHA states. Washington Administrative Code 296-45 has already integrated construction and maintenance under one standard.

5. Yes, our training addresses all requirements of WISHA and OSHA.

6. For any training to be effective, the trainer must be well prepared. This usually means that the trainer must spend approximately 3 hours on preparation for every hour of training planned.

7. The proposals are consistent. We already do this.

8. The estimate is reasonable, unless the job is especially complex.

9. We object to the term "host employer" and we believe this concept is basically flawed. We are not employers of contractors. We are "utilities" or "utilities contracting out work". This proposed change shifts responsibility for the enforcement of safety from OSHA to the utility. We are strongly opposed to becoming the "enforcement body" for OSHA. This is OSHA's responsibility. The way this is written could impact not only electrical contractors on our property, but also any other contractor that might be doing work for us, such as building maintenance, grounds maintenance, etc.

10. What are "non-recognizable" hazards? There is no definition anywhere in the text. If the hazard is truly "non-recognizable", how can the utility inform the contractor of the hazard? By definition, the hazard cannot be discerned. This term is improperly used. OSHA uses other terms to describe hazards that aren't readily identifiable.

11. See response to 10.

12. See response to 10.

13. The methodology OSHA suggests the utility use to "evaluate" the past safety performance of contractors would dictate the time required for such an evaluation. The proposal language says "The host-employer, when selecting a contractor, shall obtain and evaluate information regarding the contract employer's safety performance and programs." The evaluation of the safety performance and history of a contractor can only be as good as the information provided to the utility by the contractor. If the utility is given bad or inaccurate information by the contractor, then who stands liable if an accident should occur? This is also worded like a performance standard, which leaves much to the discretion of the compliance officer.

14. See response to 13.

15. Are you trying to make the utility buy FR clothing for contractors? The way this is worded leads us to believe this is the case. Each utility that provides FR clothes for their employees has a customized program that fits that utility, so the associated costs of an FR program are different. There is no way to answer this question scientifically. Data is different depending on what plan the utility has implemented.

16. Your question assumes that all utilities require their employees to wear FRA. Your current rule allows the utility to require their employees to not wear clothing that "when exposed to flames or electric arcs, could increase the extent of injury that would be sustained by the employee", so the question is moot.

17. See answer to 16.

18. See answer to 16.

19. Though FR clothing has become more comfortable for the wearer, the perception by those who have not seen the newest fabrics is that FR is uncomfortable to wear. Because of this, there is resistance from some workers to implement an FRA program. NFPA 70E takes a giant step back in the realm of wearer comfort. Utility workers will strongly resist having to wear the clothing that NFPA 70E requires. PPE will not work if workers don't use it, and since ANSI C2 provides the level of protection that utility workers need, the preferable approach would be ANSI C2.

20. We require employees to wear body harnesses in aerial lift equipment and we provide safety straps with locking snaps to line workers.

21. WISHA requires locking snaps on work positioning equipment.

22. We have no experience with rollout of non-locking snaphooks before they were outlawed by WISHA. We never could attribute a fall injury specifically to rollout of a snaphook.

23. We don't believe that locking snaphooks provide a significantly greater level of safety for the worker. In fact, we believe the converse may be true; that the worker must deal with a snap that is more complex and may increase the worker's exposure to fall injury.

24. This is an unreasonably conservative estimate. OSHA has not addressed the cost of shipping, taxes and other associated or hidden costs. We believe the cost may be as much as twice what OSHA has estimated.

25. Linemen use body belts in the industry. OSHA language refers to these as "positioning equipment". You need to define what the intent of this proposal is and what equipment it refers to.

26. This data is not available without significant manpower cost to the utility.

27. Approximately 50% of our projects are done under deenergized conditions.

28. It would be more efficient to combine the 1926 Subpart V and 1910.269 standards into one. Washington has already done this in WAC 296-45.

29. Where's Table 7?

30. If OSHA recognizes that there is going to be a significant cost for utilities to comply with these changes, then this proposal becomes an issue of economics. Safety needs to be standard throughout the industry. How can one entity be exempted when another isn't if the safety issue is the same?

31. We cannot answer because we don't know what PIFRA stands for. If OSHA is going to use acronyms, they need to be

explained somewhere in the text. Unexplained acronyms have no place in a document with which people must comply.

32. Reclosers and relay equipment are designed for system and intrinsic equipment protection, not for employee protection. It takes years to get this idea to be accepted by line workers and now you infer that it is safety equipment for worker protection. Take this out.

33. We are especially concerned about what impact the new HIPAA law has on record keeping such as hearing tests. We need someone who can interpret these laws through the eyes of OSHA and who can get the medical profession to understand the record keeping dilemma employers face with the new rule.